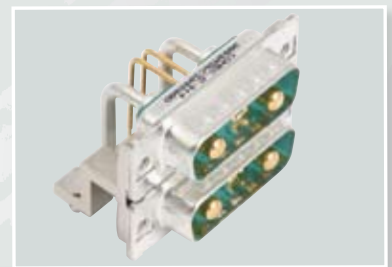




TECHNOLOGY IN CONNECTORS™

***μTCA***™ POWER MODULE INPUT CONNECTOR



MEMBER OF



Following on the heels of the ATCA standard which was developed by the PICMG® subcommittee, the MicroTCA version defines a specification for small, low-cost systems which over time are expected to find their way into a whole range of new applications.

# QUALITY IN CONNECTION POWER INPUT CONNECTORS FOR MicroTCA

An inherent part of a MicroTCA system is at least one power module. Power input connectors are located on the front of a power module. A cable is installed between the connectors and the external power source.

The MicroTCA specification defines the interface which should be applied.

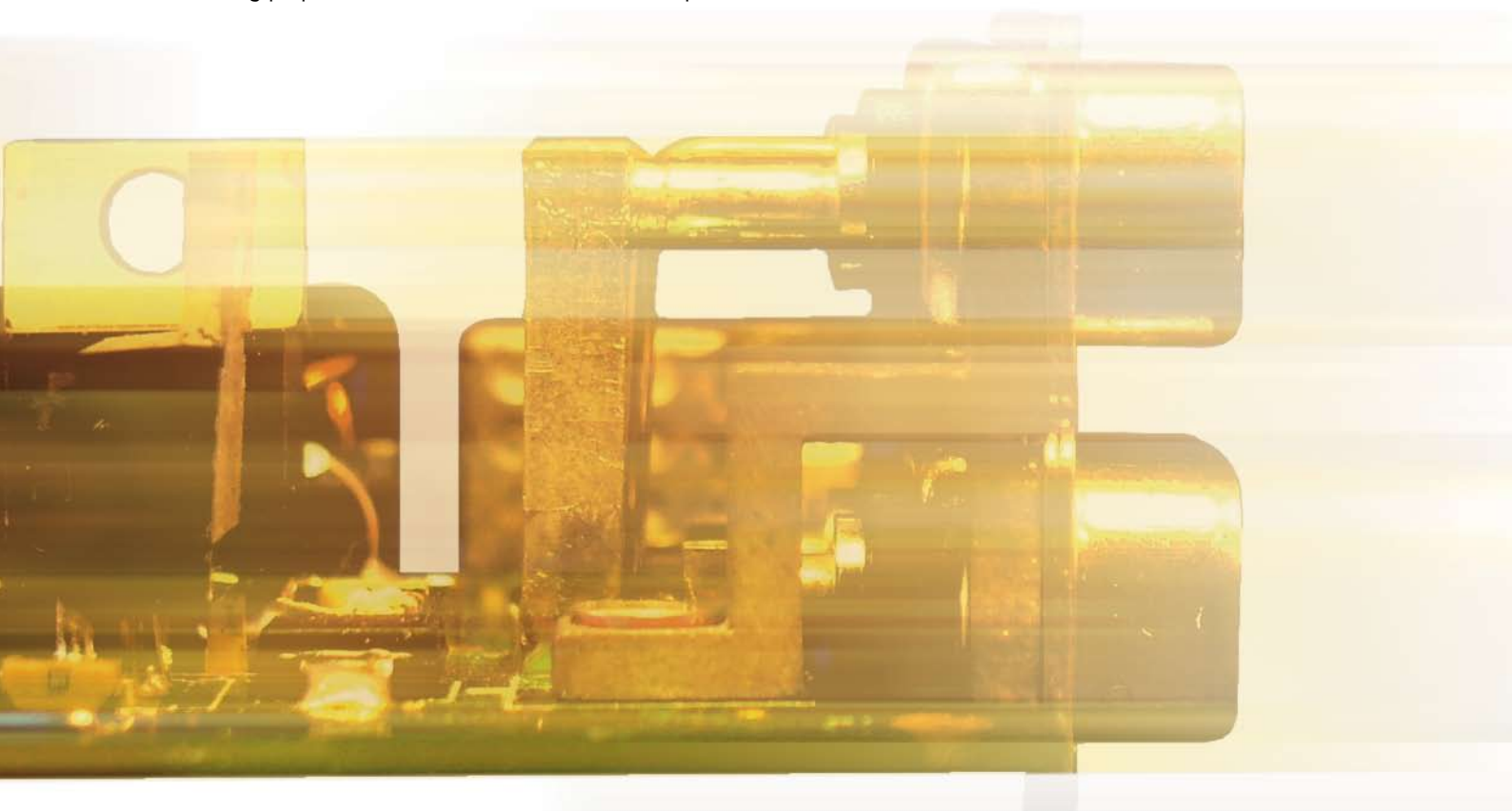
## **SPECIFICATION FOR POWER INPUT CONNECTORS**

The 7W2 combination D-SUB connector was selected for power supplies with -48 V and -60 V inputs. For coding purposes, the 9W4 was chosen for +24V inputs.

The connector has two high-current contacts and two signal contacts in a conventional D-SUB housing. The signal contacts act as control contacts used for hot swapping, and the specification states that they should be shunted at the cable connector end.

At the maximum rated current of 24A per power pin for the 7W2 version and 49A for the 9W4 type, the temperature rise at the contact must not exceed 30° C.

Furthermore the specification claims, that the connector should be designed for 200 mating cycles and additional EMI filtering options should be available.



# POWER MODULES

## CONEC PRODUCT RANGE FOR POWER INPUT CONNECTORS

For many years, CONEC has been one of the leading suppliers of reliable, high-precision connectors for telecommunications and industrial electronics. These high-quality combination connectors have a proven track record worldwide in a whole range of applications.

The high standards led to the development of a MicroTCA power input connector which exceeds MicroTCA specifications. The power contacts used by CONEC are precision screw machined parts. Due to the material selection and workmanship, the connectors meet and exceed the mechanical and electrical standards and offer significant power and performance reserves.

A special diecasting process is used to produce the rugged mounting brackets which provide an extremely stable attachment to the PCB.

In addition to the connectors specified in the MicroTCA standard, CONEC offers several variants as single-port versions, SMT types and connectors with a standard combination D-SUB connector footprint.

Applicable socket connectors and cable housings, which allow a concurrent occupation of both ports, complete the product range.

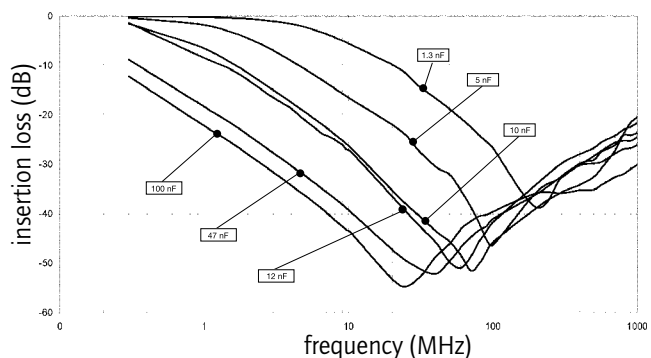
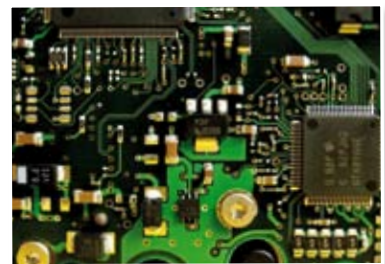
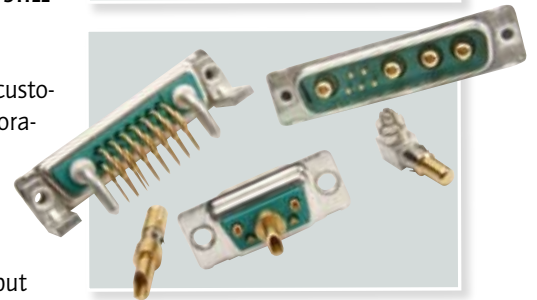
## FILTER TECHNOLOGY

The MicroTCA standard types and several versions were alternatively offered as filtered connectors. The application of filtered connectors saves space on the PCB and reduces assembly costs. Filter connectors require the same PCB layout as the standard versions. CONEC offers the MicroTCA power module input connectors with a standard low pass filter with a capacitance of 10 nF and 54 nF per power pin. Other versions are available on request.

## THE DEVELOPMENT IS STILL IN PROGRESS

Special requests by customers and our collaboration in the PICMG® subcommittee show: the efforts for standardization are still in progress but simultaneously the demand for special solutions is still growing. If you don't find your connector in this overview: Just inquire!

[www.conec.com](http://www.conec.com)



# MICROTCA POWER MODULE INPUT CONNECTOR

## IN ACC. TO MICROTCA.O SPECIFICATIONS

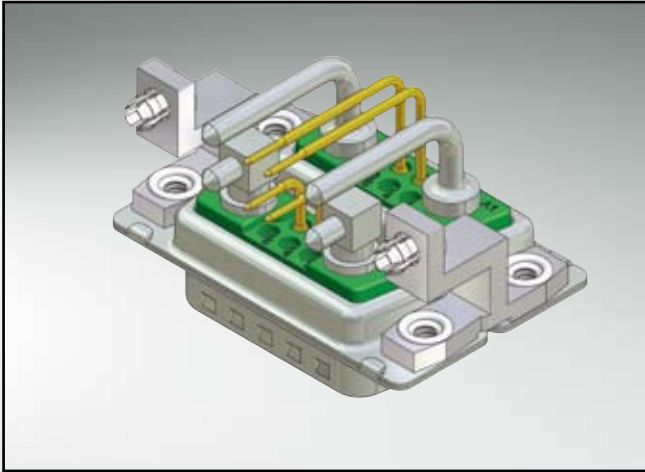
### Technical Data

|                                                  | Material                              | Finish                            |
|--------------------------------------------------|---------------------------------------|-----------------------------------|
| Insulator                                        | PBT (UL 94-V0)                        |                                   |
| Power contacts                                   | Copper alloy, screw machined contacts | Mating area Au over Ni            |
|                                                  |                                       | Termination area Sn over Ni       |
| Signal contacts                                  | Copper alloy, screw machined contacts | Mating area Au over Ni            |
|                                                  |                                       | Termination area Au over Ni       |
| Shell                                            | Steel                                 | Tin plated                        |
| Mounting brackets                                | Zinc diecast                          | Tin plated                        |
| Thread insert UNC 4-40                           | Copper alloy                          | Tin plated                        |
| Hexagonal bolts with UNC 4-40 thread and washers | Steel                                 | Nickel plated                     |
| Boardlock for 1,6 mm PCB                         | Copper alloy                          | Tin plated                        |
| Electrical Characteristics                       |                                       |                                   |
| Current rating                                   | Power contacts                        | 24 A @ max. 30°C temperature rise |
|                                                  | Signal contacts                       | 7,5 A nominal                     |
| Creepage and clearance distances                 | Power contacts                        | 1,5 mm min.                       |
|                                                  | Signal contacts                       | 0,4 mm min.                       |
|                                                  | Signal and power contacts             | 1,5 mm min.                       |
|                                                  | Power contacts and shell              | 1,5 mm min.                       |
|                                                  | Signal contacts and shell             | 1,5 mm min.                       |
| Insulation withstanding between                  | Power contacts                        | 5000 MOhm min.                    |
|                                                  | Signal contacts                       | 5000 MOhm min.                    |
|                                                  | Signal and power contacts             | 5000 MOhm min.                    |
|                                                  | Power contacts and shell              | 5000 MOhm min.                    |
|                                                  | Signal contacts and shell             | 5000 MOhm min.                    |
| Voltage proof                                    | 1000 V r.m.s.                         |                                   |
| Mechanical Characteristics                       |                                       |                                   |
| Mechanical operations                            | 250 Cycles                            |                                   |
| Insertion force                                  | 100 N max.                            |                                   |
| Extraction force                                 | 65 N max.                             |                                   |

Directive 2002 95 EC  
„RoHS“  
Compliant

# MICROTCA POWER MODULE INPUT CONNECTOR

## Standard Version

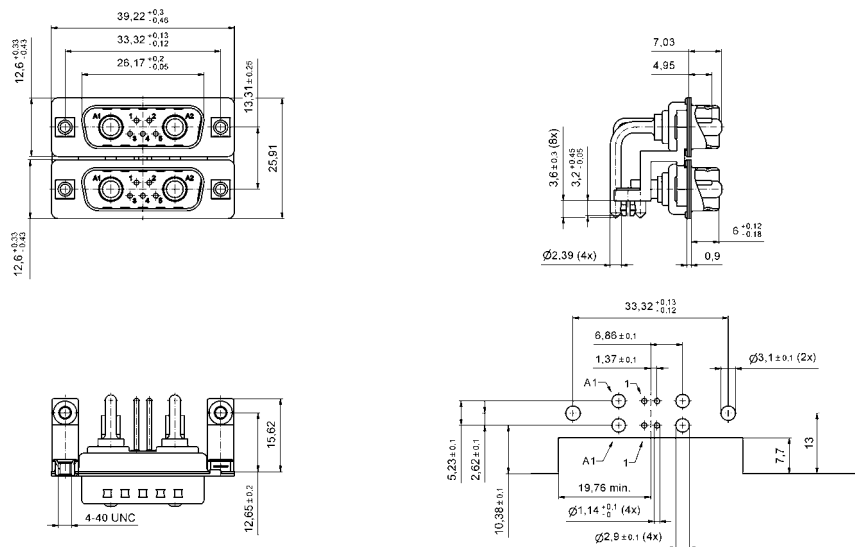


### PRODUCT FEATURES

Standard dual port version of 7W2 type for -48V/-60 V power input modules. Two power contacts with 24 A current rating and two signal contacts in acc. to MicroTCA specifications. Solid zinc diecast mounting brackets for secure mount on the printed circuit board.

- Standard version in acc. to MTCA.0-specification
- 7W2 type for -48/-60V power modules
- 9W4 type for +24 V power modules on request
- Filtered versions with 54 nF or 10 nF

### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN



### ORDERING OPTIONS

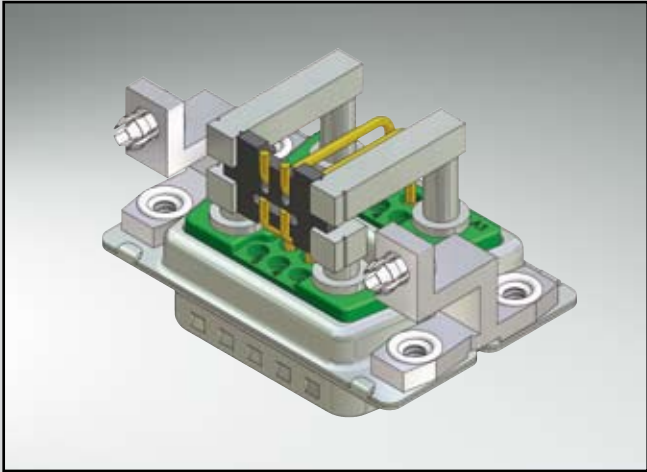
| Mounting options<br>shell                          | Filter Options | Part numbers |
|----------------------------------------------------|----------------|--------------|
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | -              | 13-000011    |
| with UNC 4-40 thread w/o bolts                     | -              | 13-000021    |
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | 54 nF filter   | 24-000031    |
| with UNC 4-40 thread w/o bolts                     | 54 nF filter   | 24-000011    |
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | 10 nF filter   | 24-000041    |
| with UNC 4-40 thread w/o bolts                     | 10 nF filter   | 24-000051    |

\* design of hexagonal bolts and additional accessories see page 15

Detailed data sheets for the mentioned part numbers are available under [www.conec.com](http://www.conec.com)

# MICROTCA POWER MODULE INPUT CONNECTOR

## SMD Version

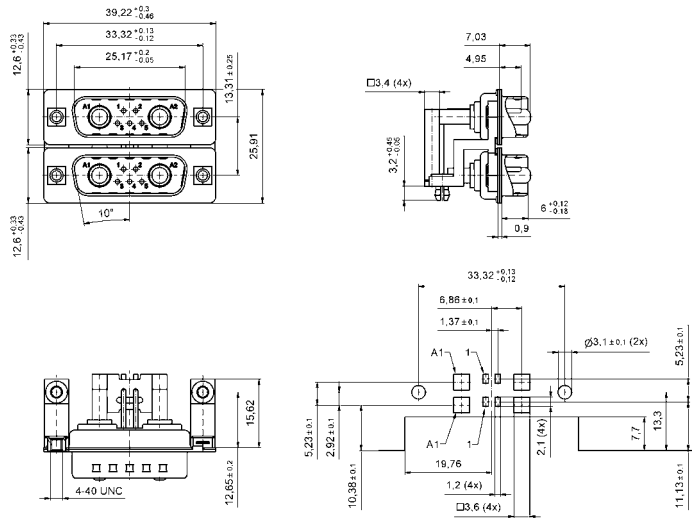


### PRODUCT FEATURES

Surface mount type of the specified MicroTCA standard connector. For reliable surface mount processing the contacts are prepositioned by a special fixing plate. The power pins are rated for up to 35 A per contact .

- SMD version
- 7W2 type for -48/-60V power modules
- 9W4 type for +24 V power modules on request

### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN



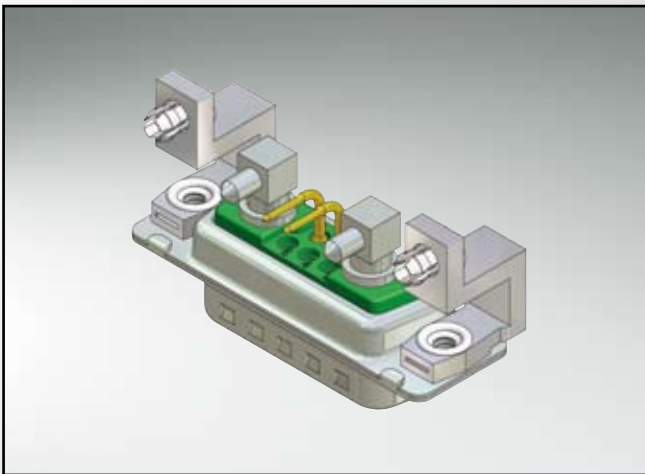
### ORDERING OPTIONS

| Mounting options<br>shell                    | Part numbers |
|----------------------------------------------|--------------|
| with UNC 4-40 thread and hexagonal bolts UNC | 13-000031    |
| with UNC 4-40 thread w/o bolts               | 13-000041    |

\*design of hexagonal bolts and additional accessories see page 15

# POWER MODULE INPUT CONNECTOR

## MicroTCA PCB Layout – Single Port



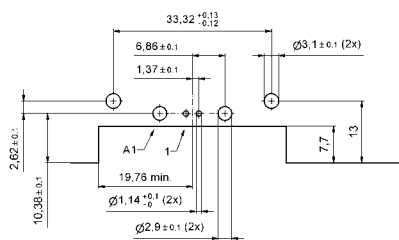
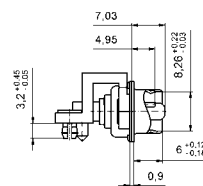
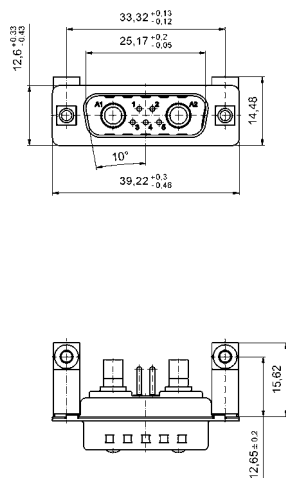
### PRODUCT FEATURES

7W2 type single port version for the design of "compact size" power modules with one power supply input. Two power contacts rated up to 24 A and two signal contacts in acc. to MicroTCA specifications.

Solid zinc diecast mounting brackets for secure mount on the printed circuit board.

- Single port version for MicroTCA PCB Layout
- 7W2 type for -48/-60V power modules
- 9W4 type for +24 V power modules on request
- filtered versions with 54 nF or 10 nF

### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN



### ORDERING OPTIONS

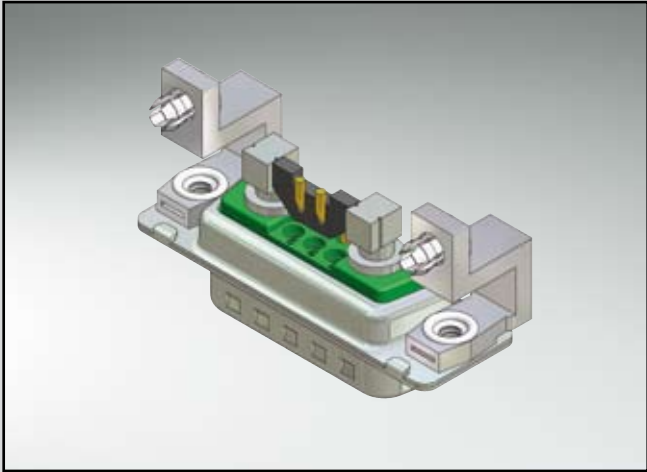
| Mounting options<br>shell                          | Filter options | Part numbers |
|----------------------------------------------------|----------------|--------------|
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | -              | 13-000051    |
| with UNC 4-40 thread w/o bolts                     | -              | 13-000061    |
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | 54 nF filter   | 24-000061    |
| with UNC 4-40 thread w/o bolts                     | 54 nF filter   | 24-000071    |
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | 10 nF filter   | 24-000081    |
| with UNC 4-40 thread w/o bolts                     | 10 nF filter   | 24-000091    |

\*design of hexagonal bolts and additional accessories see page 15

Detailed data sheets for the mentioned part numbers are available under [www.conec.com](http://www.conec.com)

# POWER MODULE INPUT CONNECTOR

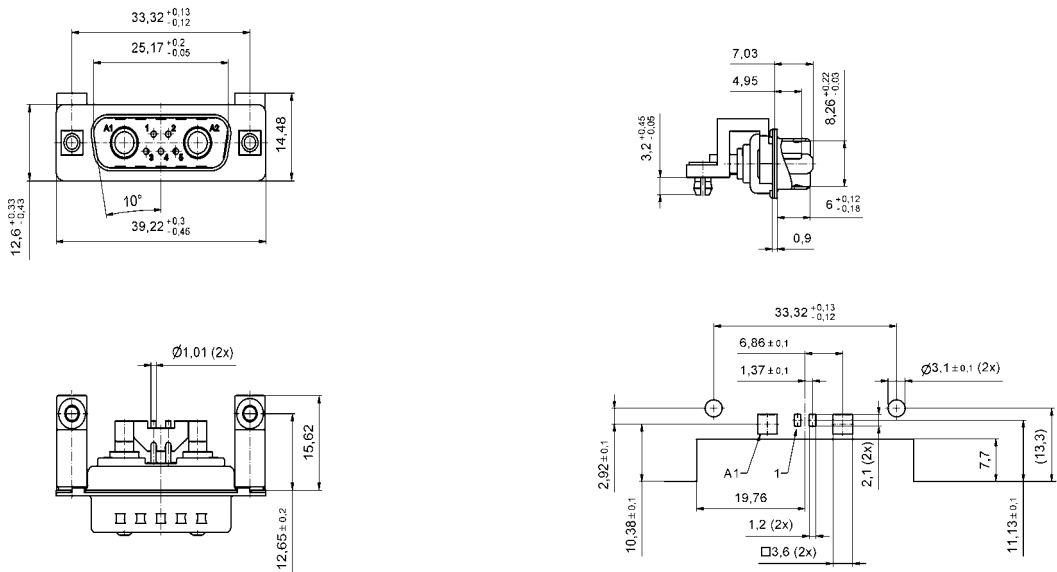
## MicroTCA PCB Layout – Single Port SMD Version



### PRODUCT FEATURES

- 7W2 type single port version. SMD type for surface mount technology. For secure surface mount processing the contacts are prepositioned by a special fixing plate.
- The power pins are rated for up to 35 A per contact .
- SMD version
  - 7W2 type for -48/-60V power modules
  - 9W4 type for +24 V power modules on request

### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN



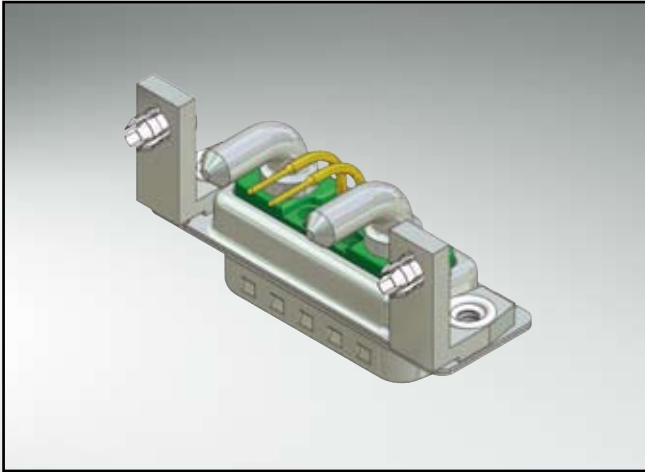
### ORDERING OPTIONS

| Mounting options shell                             | Part numbers |
|----------------------------------------------------|--------------|
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | 13-000071    |
| with UNC 4-40 thread w/o bolts                     | 13-000081    |

\*design of hexagonal bolts and additional accessories see page 15

# POWER INPUT CONNECTOR

## Single Port – Standard PCB Layout

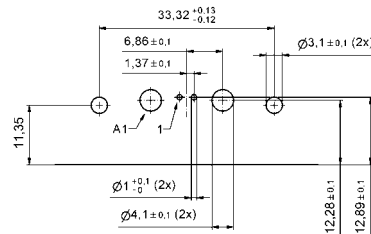
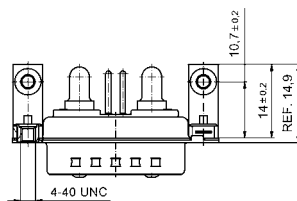
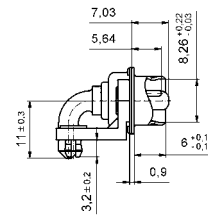
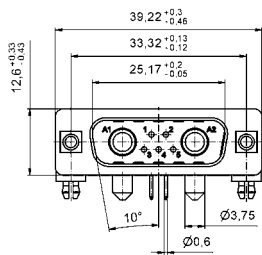


### PRODUCT FEATURES

7W2 single port connector from the CONEC combination D-SUB programm with power contacts. Designed for industry typical PCB layout with standard footprint and mounting brackets. Power contacts rated up to 40 A per pin. Two signal contacts in acc. to MicroTCA specifications assembled.

- Combination D-SUB design and PCB layout
- 40 A power contacts
- filtered versions with 54 nF or 10 nF
- 9W4 type for +24 V power modules on request

### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN



### ORDERING OPTIONS

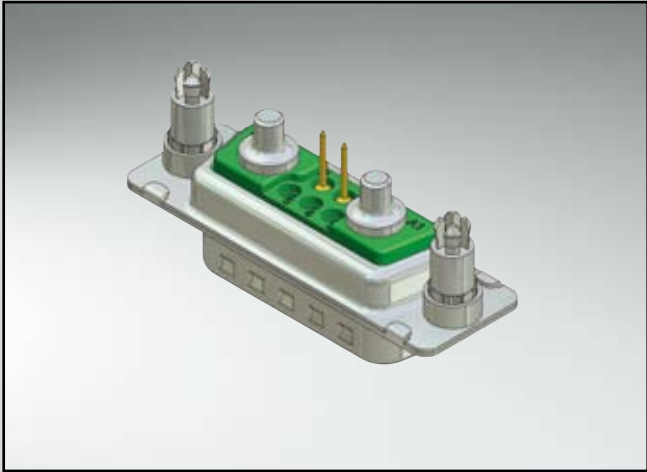
| Mounting option shell                              | Filter options | Part numbers |
|----------------------------------------------------|----------------|--------------|
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | -              | 13-000091    |
| with UNC 4-40 thread w/o bolts                     | -              | 13-000101    |
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | 54 nF filter   | 24-000101    |
| with UNC 4-40 thread w/o bolts                     | 54 nF filter   | 24-000111    |
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | 10 nF filter   | 24-000121    |
| with UNC 4-40 thread w/o bolts                     | 10 nF filter   | 24-000131    |

\* design of hexagonal bolts and additional accessories see page 15

Detailed data sheets for the mentioned part numbers are available under [www.conec.com](http://www.conec.com)

# POWER INPUT CONNECTOR

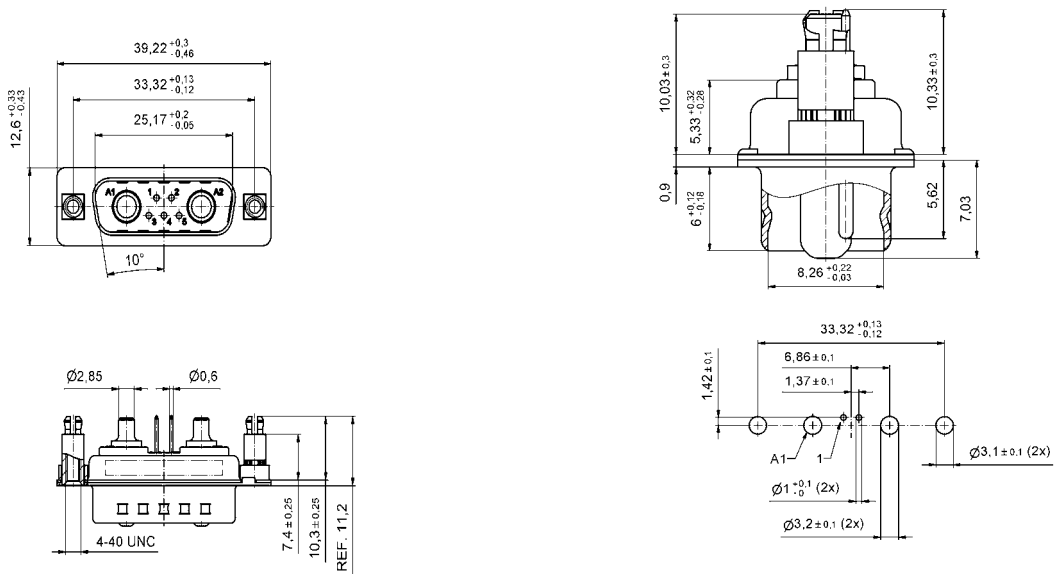
## Single Port – Straight Version



### PRODUCT FEATURES

- Straight contacts with threaded spacer clips for vertical assembly on the PCB.  
24 A rated power contacts. Signal contacts assembled on position 1 and 2 in acc. to MicroTCA specifications.
- Straight contacts
  - 24 A power contacts
  - filtered versions with 54 nF or 10 nF
  - 9W4 type for +24 V power modules on request

### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN



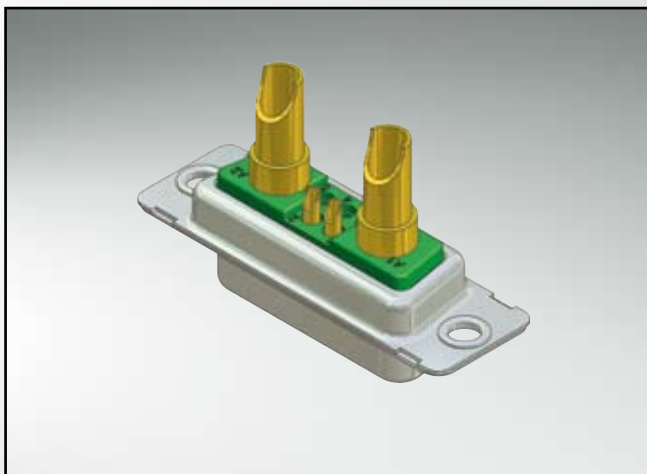
### ORDERING OPTIONS

| Mounting options<br>shell                          | Filter options | Part numbers |
|----------------------------------------------------|----------------|--------------|
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | -              | 13-000111    |
| with UNC 4-40 thread w/o bolts                     | -              | 13-000121    |
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | 54 nF filter   | 24-000141    |
| with UNC 4-40 thread w/o bolts                     | 54 nF filter   | 24-000151    |
| with UNC 4-40 thread and hexagonal bolts UNC 4-40* | 10 nF filter   | 24-000161    |
| with UNC 4-40 thread w/o bolts                     | 10 nF filter   | 24-000171    |

\*design of hexagonal bolts and additional accessories see page 15

# D-SUB SOCKET FOR MicroTCA POWER MODULE

## Solder Cup Version

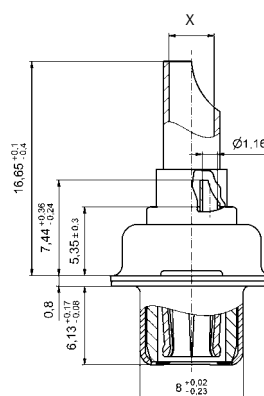
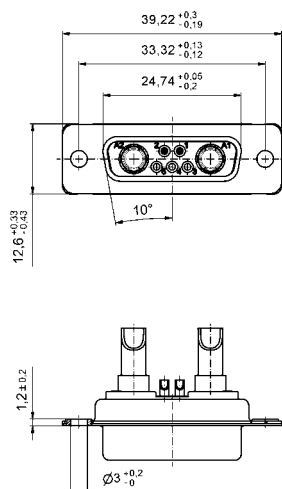


### PRODUCT FEATURES

Applicable D-SUB socket for the cable side of MicroTCAs power supply as solder cup version. Power contacts available in three sizes for different cable diameters and current ratings. Signal contacts only on position 1 and 2 in acc. to MicroTCA specifications.

- power contacts for cable size AWG 10 to AWG 20
- two signal contacts in pos. 1 and 2
- 9W4 for +24 V power modules on request

### CONNECTOR DIMENSIONS



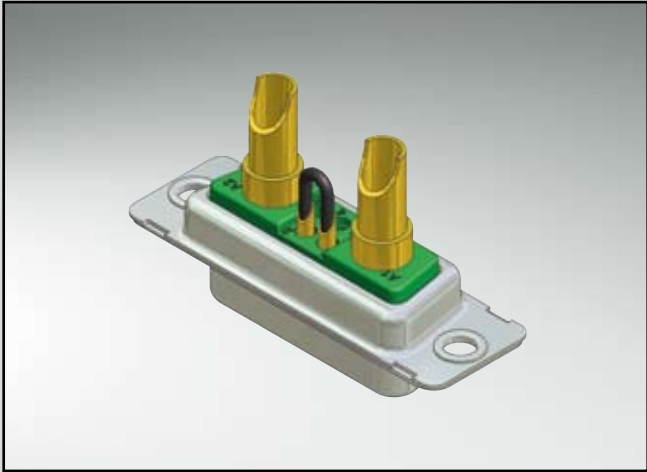
### ORDERING OPTIONS

| Applicable cable size                   | ØX (mm) | Part numbers |
|-----------------------------------------|---------|--------------|
| AWG 10-12 for up to 30 A current rating | 3,5     | 13-000131    |
| AWG 12-14 for up to 20 A current rating | 2,7     | 13-000141    |
| AWG 16-20 for up to 10 A current rating | 1,8     | 13-000151    |

Detailed data sheets for the mentioned part numbers are available under [www.conec.com](http://www.conec.com)

# D-SUB SOCKET FOR MicroTCA POWER MODULE

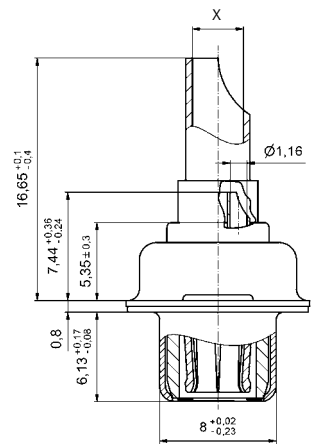
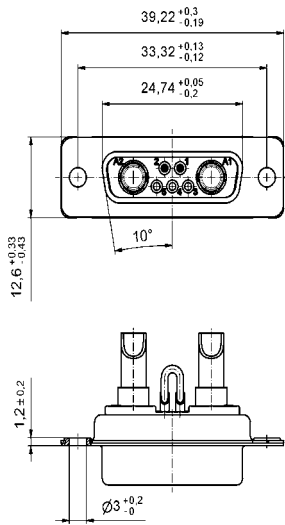
## Solder Cup Version – Bridged



### PRODUCT FEATURES

- Applicable D-SUB socket for the cable side of MicroTCAs power supply as solder cup version.  
Power contacts available in three sizes for different cable diameters and current ratings.  
Signal contacts in position 1 and 2 bridged as recommended in MicroTCA specifications.
- power contacts for cable size AWG 10 to AWG 20
  - two signal contacts assembled and bridged
  - 9W4 types for +24 V power modules on request

### CONNECTOR DIMENSIONS

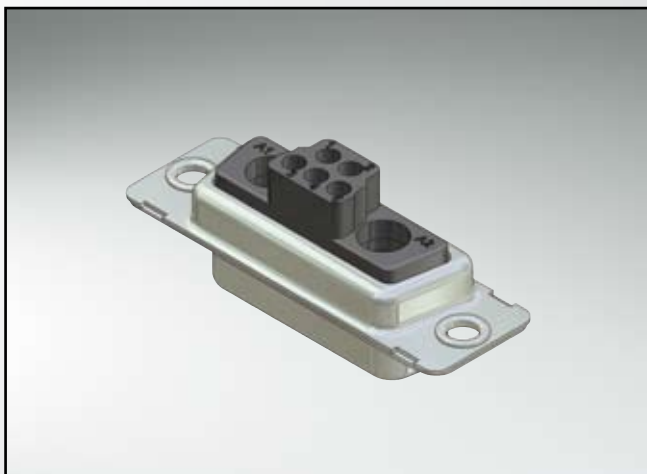


### ORDERING OPTIONS

| Applicable cable size                   | ØX (mm) | Part numbers |
|-----------------------------------------|---------|--------------|
| AWG 10-12 for up to 30 A current rating | 3,5     | 13-000161    |
| AWG 12-14 for up to 20 A current rating | 2,7     | 13-000171    |
| AWG 16-20 for up to 10 A current rating | 1,8     | 13-000181    |

# D-SUB SOCKET FOR MicroTCA POWER MODULE

## Crimp Version



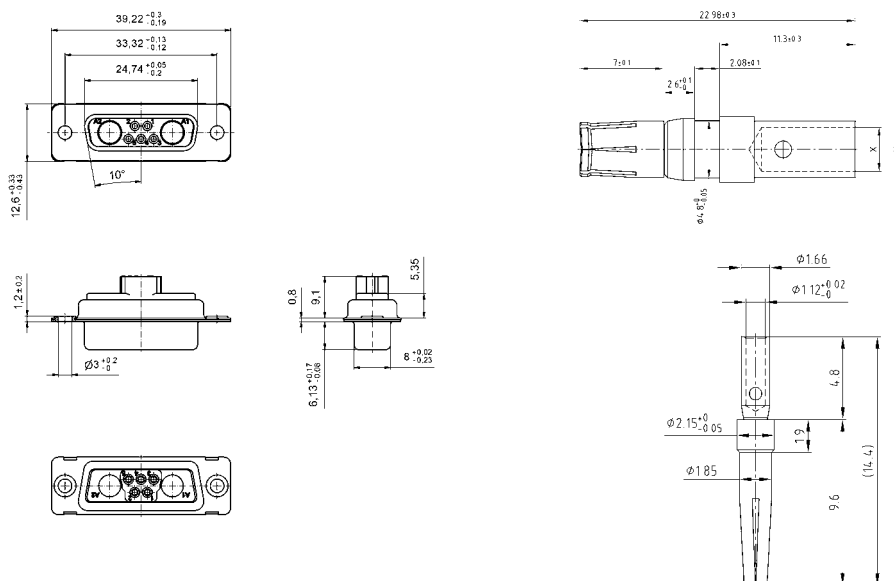
### PRODUCT FEATURES

Applicable D-SUB socket for the cable side of MicroTCAs power supply as crimp version.

Power contacts available in three sizes for different cable diameters and current ratings.

- crimp version
- power contacts for cable size AWG 10 to AWG 20
- 9W4 for +24 V power modules on request

### CONNECTOR DIMENSIONS



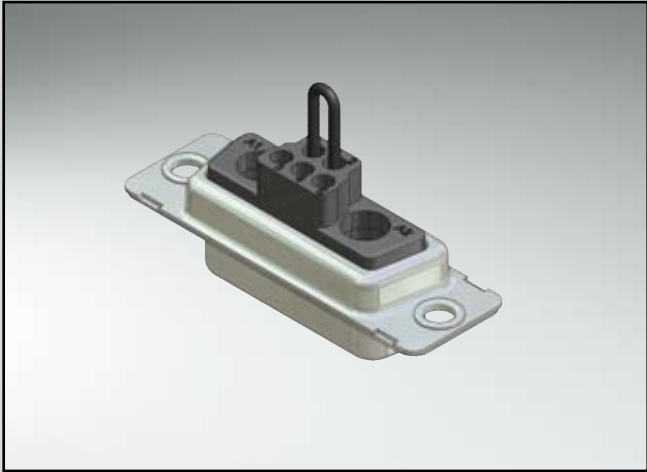
### ORDERING OPTIONS

| Description                                                   | X(mm) | Y(mm) | Part numbers |
|---------------------------------------------------------------|-------|-------|--------------|
| D-SUB Crimp Housing 7W2                                       | –     | –     | 13-000190    |
| Power crimp contact AWG 10-12 for up to 30 A current rating   | 3,7   | 4,7   | 132C11039X   |
| Power crimp contact AWG 12-14 for up to 20 A current rating   | 2,6   | 3,6   | 132C11029X   |
| Power crimp contact AWG 16-20 for up to 10 A current rating   | 1,7   | 2,6   | 132C11019X   |
| Signal crimp contact AWG 20-24 for up to 7,5 A current rating | –     | –     | 162C18709X   |

Detailed data sheets for the mentioned part numbers are available under [www.conec.com](http://www.conec.com)

# D-SUB SOCKET FOR MicroTCA POWER MODULE

## Crimp Version – Bridged

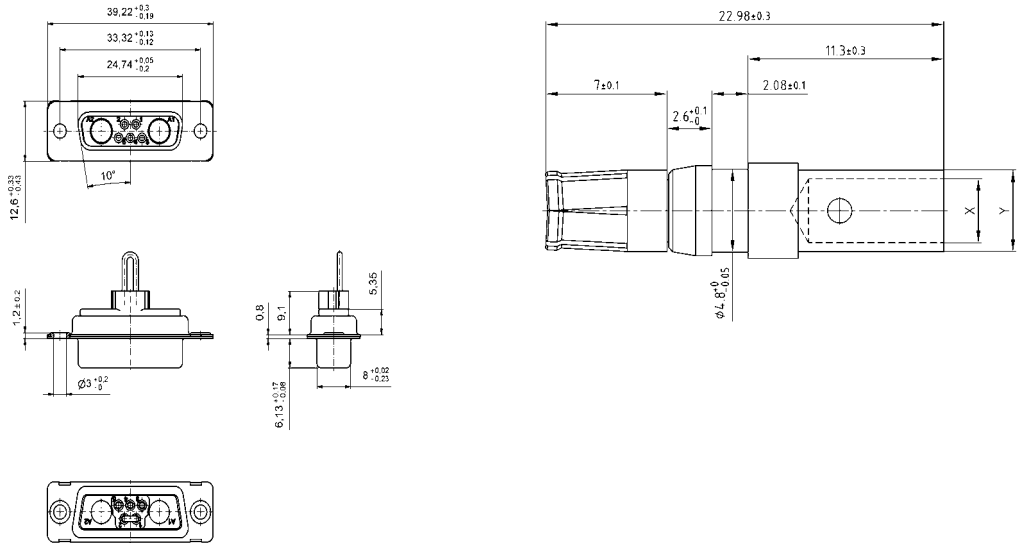


### PRODUCT FEATURES

Applicable D-SUB socket for the cable side of MicroTCAs power supply as crimp version. Power contacts available in three sizes for different cable diameters and current ratings. Signal contacts in position 1 and 2 bridged as recommended in MicroTCA specifications.

- crimp version
- Power contacts for cable size AWG 10 to AWG 20
- two signal contacts assembled and bridged
- 9W4 types for +24 V power modules on request

### CONNECTOR DIMENSIONS



### ORDERING OPTIONS

| Description                                                 | X(mm) | Y(mm) | Part numbers |
|-------------------------------------------------------------|-------|-------|--------------|
| D-SUB Crimp Housing 7W2, bridged signal contacts            | —     | —     | 13-000201    |
| Power crimp contact AWG 10-12 for up to 30 A current rating | 3,7   | 4,7   | 132C11039X   |
| Power crimp contact AWG 12-14 for up to 20 A current rating | 2,6   | 3,6   | 132C11029X   |
| Power crimp contact AWG 16-20 for up to 10 A current rating | 1,7   | 2,6   | 132C11019X   |

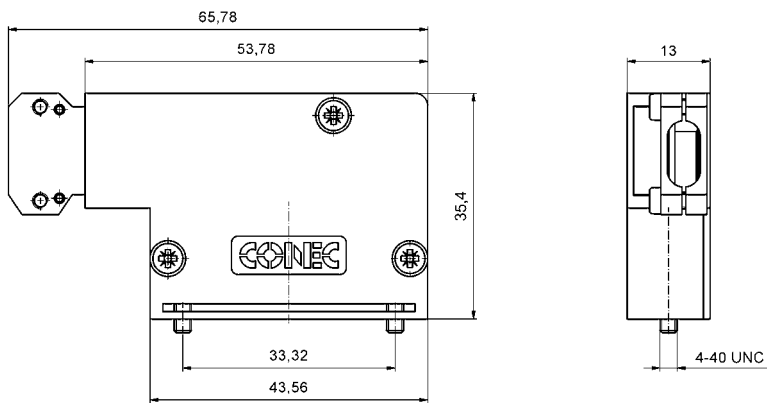
# Hood for MicroTCA Socket Connectors



**PRODUCT FEATURES**

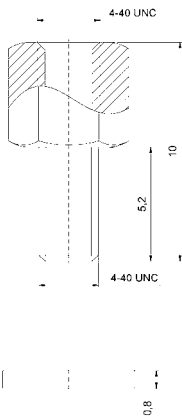
Special hood for 7W2 MicroTCA connectors. The flat design of the hood allows a parallel use of both ports of the dual port standard connector.

- flat type version
- side cable exit
- screw mounting on the power module
- strain relief



**ORDERING OPTIONS**

| Description       | Part number |
|-------------------|-------------|
| MicroTCA hood 7W2 | 16-000010   |



- Set of two bolts UNC 4-40 and two washers

**ORDERING OPTIONS**

| Description         | Part number |
|---------------------|-------------|
| Set hexagonal bolts | 16-000020   |

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**THE COMPANY**

CONEC Elektronische Bauelemente GmbH was founded 1978 in Lippstadt, Germany. Currently more than 400 employees work at the company production sites. Precision connectors for high-end applications are produced at production plants in Lippstadt (Germany), Brampton (Canada), Garner (USA) and Loucka (Czech Republic).

**THE COMPETENCE**

CONEC is an ISO/TS 16949:2002 certified company and is a qualified vendor to many well-known telecommunications, automotive, avionics and industrial electronics manufacturers. The company maintains a very high degree of vertical integration to ensure that it can react quickly to customer expectations and changes in the market. In-house tool making capability gives CONEC ample flexibility to quickly build or modify tools to accommodate customer-specific solutions.

**THE QUALITY**

The company is one of the world market leaders in filter connectors, combination D-SUB connectors and water resistant connectors.

**THE FLEXIBILITY**

The company also produces standard D-SUB, DIN / EN, coax, fiber optics and RJ 45 connectors as well as PICMG-compliant connectors and M12 and M8 circular connectors. Besides the broad product range, customers also value the company's ability to provide customer-specific solutions.

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